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### Impact of Smartphone Addiction on Students' Academic Achievement in Higher Education Institute of Pakistan

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## Impact of Smartphone Addiction on Students' Academic Achievement in Higher Education Institute of Pakistan

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**Abstract:** The present study investigates the role of smartphone usage, self-regulation, general self-efficacy and cyber loafing on university student's smartphone addiction and its impact on students' academic achievements. The data has been collected from 453 students of a private sector higher education institute of Pakistan through an online questionnaire. The results of the study indicated that both smartphone usage and cyber loafing positively and significantly affects smartphone addiction. The effect of self-regulation was negative but significant on smartphone addiction and cyber loafing. Moreover, the effect of general self-efficacy on cyber loafing was positive and significant. However, smartphone addiction has no significant effect on student's academic achievement. The findings conclude that smartphone addiction decreases academic performance of students as students lower their focus on academic learning and get addicted to smartphones for cyber loafing. Therefore, the universities should make policy regulations for students regarding the use of smartphones in the classroom. Also, students should be provided awareness about the negative impact of smartphone addiction on their personal and academic life, and also on their health through a variety of awareness seminars.

**Keywords:** Smartphone addiction, smartphone usage, self-regulation, cyber loafing, academic achievement, general self-efficacy, university students.

## Introduction

The 21st Century has witnessed the increasing advancement of technology leaving an imprint in all aspects of an individual's life. One of this technological advancement is the smartphone and its numerous applications that offer quick access to Internet and Social Media through apps such as Facebook, Whatsapp, and Twitter. Information technology has changed the lifestyle of an individual and their technology adoption. The innovation in information technology provides an opportunity to produce unique products (Qazi, Raza, & Shah, 2018). This fascination with smart gadgets has resulted in increased interaction of people with the technology which is even greater than with the people (Griffiths,

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2000). Smartphones have evolved to the extent of becoming an integral part of people's life. Smartphones are used for many reasons such as communication, entertainment, productivity, social networking and gaming (Kwon et al., 2013). Smartphones not only have replaced the traditional cell phones but have also replaced personal computers and many other similar devices. People nowadays feel inseparable from their smartphones. In parallel with the increasing development of technology and excessive use of smartphones, one of the major issues that researchers have observed and are working on is smartphone addiction. Aljomaa, Qudah, Albursan, Bakhiet, and Abduljabbar (2016) conducted a survey on undergraduate students' addiction level to smartphone and found that the level of addiction was as high as 48%. Doorn (2011) states that this addiction level is a thought provoking and significant finding in understanding the life of modern people.

Smartphone addiction leads directly or indirectly to many problems in education and affects the classroom inside and outside. Using smartphone for irrelevant activities in the classroom environment is called cyber loafing (Selwyn, 2008). Cyber loafing is associated with smartphone addiction and is considered to be a negative factor which lowers the academic success and performance of the students.

Furthermore, psychological features were also studied to understand the effect of over-use of internet on peoples' life and health (Whang, Lee, & Chang, 2003) and it was found that most of the people don't use their smart phones only to make phone calls but also for playing games. They have developed a personal relationship with their smartphones which satisfies them only when they check or see their smartphones' screens. This is also a sign of addiction which is increasing day by day (Gökçearsan, Mumcu, Haşlamam, & Çevik, 2016). Some theoretical work and empirical knowledge have been provided to guide researchers in examining the social impacts of smart phone usage. It was found that the use of social media is an important factor for smart phone addiction. Apart from smart phone addiction, self-regulation and discipline of life also gets damaged because of excessive use of smart phone. It is also very common at work place or in schools that many people indulge in cyber loafing during office hours as individuals with higher general self-efficacy have high self-efficacy level and technological competency.

A lot of researches have made relative contribution regarding the impact of smart phone addiction and its usage among different sectors, ages and many more. A lot more researches have also been conducted but no proper attention had been given to know the impact of smart phone usage and its addiction on university students. Many people face difficulty because of smart phone usage in education or at work place. Some people even develop medical issues like back pain, wrist pain etc due to excessive use of smartphones which can lead to dangerous accidents and prove fatal for someone's life. This even raises the concern of the parents towards their children and worries them about their grades and non-serious attitude towards their studies.

In past years, many researches have been conducted to identify the problem of smart phone addiction among adolescents. Most of the researches targeted the adolescents and university students because this addiction is increasingly spreading in youngsters. Also, the impact of smart phone addiction has been examined at workplace to check the competency levels of the employees. It was found that smart phone addiction also causes health issues like emotional stress, sleep disturbance and academic failures (Lee, Cho, Kim, &

Noh, 2015). Another research examined the relationship of peers such as the student-student relationship among adolescents due to smart phone addiction by calculating their self-esteem, ethics etc and found out that the youngsters who were more addicted towards smart phone were likely to have many other problems and weaker relationship. The use of smart phone in the universities for personal use even lead to academic failures (Gökçearslan et al., 2016).

Smart phones are creating new interactive spaces for all aspects of education, shopping, socializing, health and many other to make life easier but nowadays students use it in a destructive way and are losing their control, interests, physical activities, communication and confidence which disturbs their studies as they are involved in cyber loafing during class hours (Gökçearslan, Uluyol, & Şahin, 2018). Furthermore, the discussion over the smart phones has taken over personal discussions which results in losing confidence. It was also observed that male students are more affected by smart phone addiction than females students as they neglected their work and studies but females didn't often do that. The problem of parent and children's relation was also seen towards smart phone addiction that the parents were also getting addicted towards smart phones and were not giving enough attention to their children's needs and upbringing.

To identify that how smart phone addiction is effecting university students we conducted this research with the help of some variables to know the impact. After reading many research papers and analyzing their results it was concluded that the main problem of smart phone addiction among university students was due to the misuse which lead to a few health issues as well. Many factors were used for examining the problem. The reason for conducting this research is to find the reasons that why smart phone addiction is increasing in the university students and to find its solutions. We identified that still some more variables should have been added for analyzing this addiction among university students and adolescents.

This research will be beneficial for the students as they will gain a proper knowledge on the effects of mobile phones in their academic performance. The teachers are known as the second parents of their students. Therefore, they will be able to learn the effects of mobile phones addiction in the academic performance of the students and will be enlightened on how to control, discipline and teach their students. Parents are the guardians of their children's life and with this research they will be able to know and learn the effects of mobile phone addiction so that their academic performance could be enhanced and they will be able to guide their children in a right way.

## **Literature Review**

### **Theoretical Background**

There are several theories that explain technology and smartphone addiction. This study has adopted the theory of behaviorism. The theory of behaviorism is based on learning behavior of an individual that can be controlled and changed. Smartphone addiction is a learned behavior and occurs when students surround themselves in the environ-

ment where everyone is addicted to using smartphones for socializing with others. To make themselves attractive, they start socializing with people on social networking sites and spend most of their time using smartphone for activities not related to their work and spend less time on their studies. This behavior affects their personal and academic life. Therefore, if we guide people or warn them by creating awareness about the disadvantages of smartphone addiction on their health, personal life and academic life, they can change their behaviors. Various researches on smartphone addiction have been conducted and numerous variables have also been taken into consideration. These include: user characteristics; stress in life (Chiu, 2014); academic success; learning (Lee et al., 2015); and self-regulation.

## **Hypothesis Development**

### **Smartphone Usage and Smartphone Addiction**

The usage of smartphones by younger generation is higher as compared to the older ones (Kwon et al., 2013). The younger generation is considered to be the wired generation, as they use smartphones to get in touch and stay connected with each other and to conduct most of their activities with the help of smartphones (Iacobucci & Churchill, 2010). Thus, the tendency of smartphone addiction is higher in younger people. Venkatesh, Al Jemal, and Al Samani (2017) in their study conclude that longer duration of smartphone usage is significantly associated with smartphone addiction. A Smartphone application develops the habit in people to continuously check their phones and this eventually turns into addiction (Raza, Umer, Qazi, & Makhdoom, 2018). Thus, we propose the following hypothesis:

*H<sub>1</sub> : Smartphone usage has a positive effect on smartphone addiction.*

### **Self-regulation and Smartphone Addiction**

Self-regulation refers to self-generated thoughts, feelings, and actions that are planned and adapted for the purpose of achieving personal goals. People who fail to self-regulate increase their usage of social media which turns into an addiction. Gökçearsan et al. (2016) states that the students with high self-regulation skills show lower smartphone addictive behavior. Moreover, Kanthawongs, Jabutay, Upalanala, and Kanthawongs (2016) in their study, concluded that self-regulation does not have significant effect on smartphone addiction. Also, Van Deursen et al., (2015) states that low levels of self-regulation lies behind the risk of addiction to smartphone. Therefore, we propose the following hypothesis:

*H<sub>2</sub> : Self-regulation has a negative effect on smartphone addiction.*

### Self-regulation and Cyber Loafing

An important determinant of cyber loafing is the lack of self-regulation (Prasad, Lim, & Chen, 2010). Self-regulation is a significant variable that resists cyber loafing behaviors. When individuals engage in cyber loafing, it is due to their inability to regulate their attentional resources towards relevant tasks. Individuals having high self-regulatory skills are able to keep their attention focused towards their tasks and are better able to resist the temptation of cyberloafing. A study by Prasad et al. (2010) showed a negative relation between self-regulation and cyber loafing. Moreover, they also found negative relationship between self-regulation and cyber loafing. Thus, we propose the following hypothesis:

*H<sub>3</sub> : Self-regulation has a negative effect on cyber loafing.*

### Cyber loafing and Smartphone Addiction

The term Cyber loafing can be defined as “using internet during working hours but not for the purpose of doing work”. Cyber loafing is a method used for coping with certain workplace stressors. It allows the worker to take a break from the work environment and then re-focus on their work. Cyber loafing also refers to the use of internet by students during their lessons for activities that are not related to their studies. It leads to student's disengagement in class, lack of motivation, and discipline issues. According to Doorn (2011), compulsive behavior of cyber loafing relates to addictive behavior. The study of Gökçearsan et al. (2016) concludes that cyber loafing is related to smartphone addiction. Moreover, Kim et al., (2015) stated that student's potential for cyber loafing behaviors increases due to the increased use of smartphones. The smartphone applications that trigger the cyber loafing behavior are connected to the addictive behavior of smartphone. Thus, we propose the following hypothesis:

*H<sub>4</sub> : Cyber loafing has a positive effect on smartphone addiction.*

### General Self-efficacy and Cyber Loafing

Self-efficacy refers to the individual's ability to perceive themselves as being highly focused and having a clear vision of their goals. People who have high score on self-efficacy believe that they can perform the given task in a better way. Prasad et al. (2010) states that there is a positive effect of self-efficacy on cyber loafing. Moreover, the study of Garrett and Danziger (2008) concludes that high self-efficacy levels results in more surfing on internet at the workplace. McCoy (2010) in their study found that the workers who had high levels of self-efficacy possessed higher level of computer self-efficacy and are technological competent. Thus, we propose the following hypothesis:

*H<sub>5</sub> : General self-efficacy has a positive effect on cyber loafing.*

## Smartphone Addiction and Student's Academic Achievement

The lives of youth revolve around mobile phones nowadays. Kibona and Mgya (2015) in their study conclude that there is a negative relation between smartphone addiction and academic performance of students. Najmi, Raza, and Qazi (2018) stated that English language and means of communication, teaching style and ways of assessments are the important factors that affect the academic performance of the students. Hence, smartphone is also a crucial factor that might have a positive and negative impact. The more the students get addicted to their smartphone the less they will focus on their studies which will decrease their academic performance. Moreover, the continuous use of smartphone will also lower the learning level of students. Several studies have found negative relationship between addiction and performance. Smartphone addiction also isolates the students from their family and friends. Thus, we propose the following hypothesis:

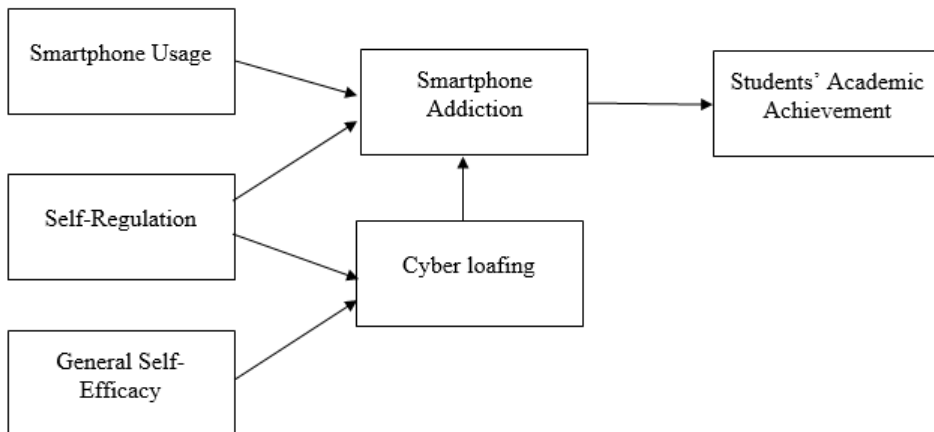
$H_6$  : Smartphone addiction has a negative impact on student's academic achievement.

## Methodology

### Research Model

The conceptual model of present study is demonstrated in Figure 1. The model demonstrates the impact of smartphone usage, self-regulation, general self-efficacy on smartphone addiction and cyber loafing. Furthermore, relationship between smartphone addiction and students' academic achievement is analyzed.

Figure 1  
Conceptual Framework



## Data Collection and Instrumentation

In total, 476 respondents participated and after data screening 23 responses were deleted because they were incomplete or had missing values. The final sample size used in the study was 453. The sample size is based on reporting of many researchers who stated that three or more items per variable and a sample size of 100 is enough for convergence. According to [Anderson and Gerbing \(1984\)](#), the sample size of 150 is sufficient for a convergent and proper solution. For SEM technique, [Churchill Jr \(1979\)](#) reported that it can perform well even on the samples of 50-100. So, the sample size of our study is sufficient to perform the estimations.

The data for this study is collected through a survey questionnaire. The questionnaire was based on a 5-point Likert scale from strongly disagree (1) to strongly agree (5). The items of all the variables were adapted from [Gökçeşlan et al. \(2016\)](#). However, items of students' academic achievement were adapted from [Liran and Miller \(2019\)](#). Throughout the data collection process, all respondents were requested to participate voluntarily and assurance was given that their information will be kept confidential.

## Data Analysis

Structural equation modeling (SEM) is a technique used to assess the theory's validity with the help of statistical facts ([Ringle, Wende, & Will, 2005](#)). The two methods which are usually used are; (i) covariance based and (ii) variance based. The present study comprised of the variance based method i.e., Partial least square (PLS) is employed to evaluate the hypothetical model. The PLS-SEM is performed with the help of SmartPLS 3.2.9 software ([Ringle, Wende, Becker, et al., 2015](#)) and a bootstrap resampling of 5000 subsamples was used ([Hair, Ringle, & Sarstedt, 2011](#); [Raza & Hanif, 2011](#); [Raza, Qazi, & Umer, 2017](#)). PLS (SEM) is considered to be suitable for several research situations and complicated models. The estimation was based on the guidelines of [Anderson and Gerbing \(1988\)](#) and was performed in two steps. In step one, the reliability and validity of the model have been assessed and in step two the assessment of structured model and hypotheses were tested.

Table 1  
Demographic Profile

Demographic items	Frequency	Percentage
<b>Age</b>		
18-22	198	43.70%
23-27	250	55.20%
28-32	5	1.10%
<b>Gender</b>		
Male	251	55.41%
Female	202	44.59%
<b>Education</b>		
Undergraduate	284	62.69%
Graduate	98	21.63%
Post Graduate	61	13.47%
Others	10	2.21%



The data was collected from the students of a private sector university based in Karachi, Pakistan. The details of demographic profiles are presented in Table 1. As seen from the demographic characteristics, 55.41% respondents were male and remaining 44.59% were female. In terms of age, 43.7% respondents come under the age group of 18-22 years, 55.2% lie at the age bracket of 23-27, and 1.1% belongs to the age group of 28-32 years.

## Measurement Model

The competency of the model is evaluated by the (i) construct reliability (ii) individual item reliability, (iii) convergent validity (iv) discriminant validity.

Table 2  
Measurement Model Results

	Items	Loadings	Cronbach's Alpha	Composite reliability	Average variance extracted
<b>CL</b>	CL1	0.739	0.818	0.865	0.712
	CL2	0.725			
	CL3	0.741			
	CL4	0.710			
	CL5	0.707			
	CL6	0.740			
	CL7	0.629			
<b>GSE</b>	GSE1	0.731	0.815	0.865	0.518
	GSE2	0.707			
	GSE3	0.757			
	GSE4	0.752			
	GSE5	0.726			
	GSE6	0.736			
	SAA1	0.707			
<b>SAA</b>	SAA2	0.744	0.779	0.850	0.532
	SAA3	0.742			
	SAA4	0.746			
	SAA5	0.782			
	SPA1	0.711			
<b>SPA</b>	SPA2	0.817	0.767	0.805	0.510
	SPA3	0.612			
	SPA4	0.724			
<b>SPU</b>	SPU1	0.779	0.738	0.780	0.640
	SPU2	0.821			
	SR1	0.781			
<b>SR</b>	SR2	0.811	0.812	0.867	0.568
	SR3	0.711			
	SR4	0.758			
	SR5	0.700			

Notes: CL=Cyber loafing; SPA= Smartphone addiction; GSE= General Self-Efficacy; SAA= Students' academic achievement; SPU= Smartphone usage; SR= Self-Regulation

As seen in table 2, all the variables have Cronbach's alpha and composite reliability, greater than 0.7 which meets the criteria of [Straub \(1989\)](#).

Table 3  
Fornell-Larcker criterion

	CL	GSE	SAA	SPA	SPU	SR
CL	<b>0.844</b>					
GSE	0.658	<b>0.719</b>				
SAA	0.673	0.667	<b>0.729</b>			
SPA	0.326	0.589	0.583	<b>0.714</b>		
SPU	0.351	0.452	0.351	0.321	<b>0.837</b>	
SR	0.484	0.655	0.548	0.433	0.605	<b>0.753</b>

Notes: CL=Cyber loafing; SPA=Smartphone addiction;  
GSE=General Self-Efficacy; SAA=Students' academic achievement; SPU=Smartphone usage; SR=Self-Regulation

Table 4  
Loadings and Cross Loadings

	CL	GSE	SAA	SPA	SPU	SR
CL1	<b>0.739</b>	0.516	0.525	0.445	0.336	0.425
CL2	<b>0.725</b>	0.547	0.554	0.449	0.280	0.498
CL3	<b>0.741</b>	0.519	0.420	0.569	0.250	0.372
CL4	<b>0.710</b>	0.426	0.322	0.493	0.180	0.202
CL5	<b>0.707</b>	0.451	0.455	0.612	0.139	0.297
CL6	<b>0.740</b>	0.530	0.546	0.618	0.250	0.309
CL7	<b>0.629</b>	0.426	0.415	0.407	0.276	0.216
GSE1	0.416	<b>0.731</b>	0.467	0.501	0.366	0.604
GSE2	0.392	<b>0.707</b>	0.448	0.408	0.319	0.495
GSE3	0.505	<b>0.757</b>	0.560	0.356	0.361	0.452
GSE4	0.473	<b>0.752</b>	0.448	0.298	0.317	0.414
GSE5	0.588	<b>0.726</b>	0.428	0.469	0.308	0.398
GSE6	0.615	<b>0.736</b>	0.527	0.498	0.302	0.506
SAA1	0.508	0.405	<b>0.707</b>	0.399	0.246	0.348
SAA2	0.449	0.568	<b>0.744</b>	0.449	0.293	0.396
SAA3	0.428	0.454	<b>0.742</b>	0.367	0.289	0.457
SAA4	0.560	0.493	<b>0.746</b>	0.485	0.212	0.375
SAA5	0.485	0.493	<b>0.782</b>	0.398	0.244	0.429
SPA1	0.531	0.454	0.339	<b>0.711</b>	0.112	0.258
SPA2	0.720	0.467	0.46	<b>0.817</b>	0.275	0.268
SPA3	0.366	0.384	0.52	<b>0.612</b>	0.37	0.437
SPA4	0.479	0.37	0.337	<b>0.724</b>	0.142	0.294
SPU1	0.307	0.384	0.267	0.244	<b>0.779</b>	0.471
SPU2	0.258	0.343	0.295	0.268	<b>0.821</b>	0.496
SR1	0.318	0.447	0.364	0.286	0.535	<b>0.781</b>
SR2	0.347	0.517	0.483	0.31	0.544	<b>0.811</b>
SR3	0.304	0.446	0.377	0.255	0.421	<b>0.711</b>
SR4	0.336	0.427	0.444	0.251	0.558	<b>0.758</b>
SR5	0.455	0.571	0.389	0.452	0.284	<b>0.700</b>

Note: CL=Cyber loafing; SPA=Smartphone addiction;  
GSE=General Self-Efficacy; SAA=Students' academic achievement; SPU=Smartphone usage; SR=Self-Regulation

The individual reliability of all the variables is greater than 0.7 which is in accordance with the criteria given by Churchill Jr (1979). According to him, each loading should be higher than 0.7 and the loadings. The loading above 0.7 confirms the instrument reliability. The convergent validity was evaluated through average variance extracted (AVE) and all variables have a minimum value of 0.50 which meets the benchmark proposed by Fornell and Larcker (1981).

The discriminant validity was assessed after the convergent validity by using (i) cross

loading analysis (2) AVE. Table 3 represents the square root of AVE in the diagonal form and satisfies the criteria of [Fornell and Larcker \(1981\)](#) that AVE should be higher than the correlation between the variables. As seen from table 4 the individual items of each construct are loaded higher in their relevant constructs as compared to the other constructs and the cross loading difference is also higher than the recommended criteria of 0.1 ([Qazi et al., 2018](#)). Thus, it explains the discriminant validity adequacy. Furthermore, table 4 shows that the heterotrait-monotrait ratio of correlations (HTMT) shows that none of the HTMT criteria are higher than 0.85 ([Raza, Umer, & Shah, 2017](#)).

Table 5  
Heterotrait-Monotrait Ratio (HTMT)

	CL	GSE	SAA	SPA	SPU	SR
CL						
GSE	0.196					
SAA	0.037	0.345				
SPA	0.180	0.383	0.137			
SPU	0.174	0.518	0.359	0.751		
SR	0.102	0.200	0.130	0.251	0.208	

Notes: CL=Cyber loafing; SPA= Smartphone addiction; GSE= General Self-Efficacy; SAA= Students' academic achievement; SPU= Smartphone usage; SR= Self-Regulation

Since, the measurement model confirms the convergent and discriminant validity; thus, it confirms the variable distinctiveness and can be used to examine the structural model.

## Structural Model

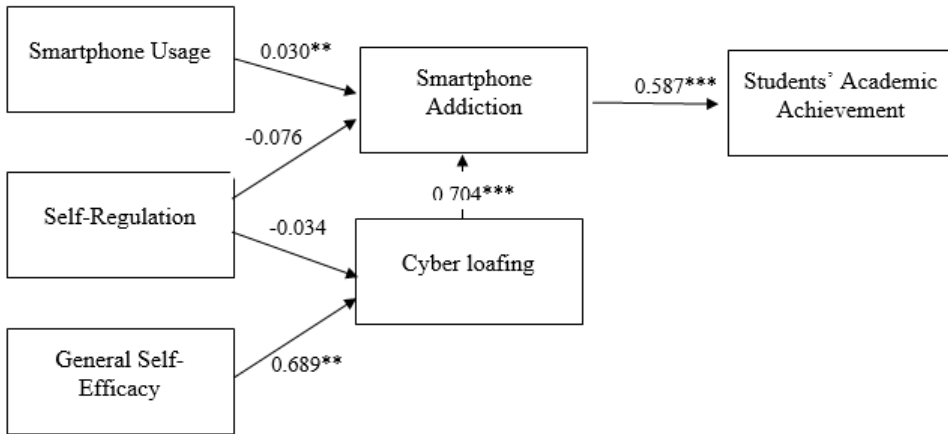
The structural model was analyzed by examining the standardized paths. Each path corresponds to a hypothesis. The results are shown in table 7. Six hypotheses were generated and out of six, five hypotheses are accepted and one is rejected which was: smartphone addiction has a positive impact on students' academic achievement.

Table 6  
Result of Path Analysis

Hypothesis	Regression Path	Effect type	SRW	Remarks
H1	CL → SPA	Direct Effect	0.704***	Supported
H2	GSE → CL	Direct Effect	0.689***	Supported
H3	SPA → SAA	Direct Effect	0.587***	Not Supported
H4	SPU → SPA	Direct Effect	0.030**	Supported
H5	SR → CL	Direct Effect	-0.034	Supported
H6	SR → SPA	Direct Effect	-0.076	Supported

Notes: CL=Cyber loafing; SPA= Smartphone addiction; GSE= General Self-Efficacy; SAA= Students' academic achievement; SPU= Smartphone usage; SR= Self-Regulation

**Figure 2**  
Results of Path Analysis



## Discussion

The present study examined the impact of smartphone usage, self-regulation, general self-efficacy, and cyber loafing on smartphone addiction which impacts the student's academic achievements. The findings of the study shows that the smart usage and cyber loafing has a positive and significant effect on smartphone addiction whereas self-regulation has a significant but negative effect on smartphone addiction. Moreover, general self-efficacy has positive and significant effect and self-regulation has negative and significant effect on cyber loafing. Furthermore, smart phone addiction has positive but insignificant effect on student's academic achievement. The interpretation of hypothesis is as follows: The first hypothesis is about cyber loafing and smartphone addiction. The findings conclude that cyber loafing has positive and significant effect on smartphone addiction. The results were similar to the study of Gökçearslan et al. (2016) and concludes that smartphone addiction and cyber loafing are related. The second hypothesis about general self-efficacy and cyber loafing was also supported in this study and the findings were similar to the study of Prasad et al. (2010) and concludes that the self-efficacy effects cyber loafing. Another hypothesis of the study suggests that smartphone addiction have positive but insignificant effect on student's academic achievement because student's when get addicted to smartphones focus less on their studies which decreases their academic performance. Similar findings were observed. The fourth hypothesis of the study concludes that smartphone usage have positive and significant effect on smartphone addiction. The findings were similar to the study of Augner and Hacker (2012) and conclude that continuously using smartphones makes people addictive towards their smartphones. The finding that self-regulation has significant but negative effect on cyber loafing is similar to the study of Prasad et al. (2010). The last hypothesis of the study concludes that self-regulation has significant but negative effect on smartphone addiction. The findings were similar to the

study of Jeong et al., (2016) and conclude that individuals lacking self-regulation skills are more addicted to smartphone.

## **Conclusion, Implications and Recommendations**

The present study examined the role of smartphone usage, self-regulation, general self-efficacy, and cyber loafing on smartphone addiction which negatively effects student's academic achievement. The data has been collected from university students to observe their level of smartphone addiction. Various tests have been done in this study to test the relationship between the variables. The SmartPLS software has been used in the study to test the hypotheses. The findings of the study found significant and positive relationship between cyber loafing, smartphone usages and smartphone addiction. Moreover, the findings found significant but negative relationship between self-regulation and cyber loafing and between self-regulation and smartphone addiction. Furthermore the relationship between general self-efficacy and cyber loafing was also supported. However, the relationship between smartphone addiction and academic achievement was not supported. The findings of the study suggests that the academic institutions need to make rules regarding the usage of smartphone in the classroom and should ensure that these rules are implemented with consistency. Moreover, educational seminars should be held in the university to increase the awareness of the negative impacts of smartphone addiction on students' academic performance. The study also suggests that decreased cyber loafing in class might help students focus more on their studies and other educational activities. The data for this study has been collected from students of single university. Therefore, future studies should collect data from different universities and should re-analyze the relationships and explore if it is the same between different disciplines or backgrounds. This study has tested the direct relationships between independent and dependent variables. Therefore, future studies can add mediation or moderation to the research model to obtain different insights.

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